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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,366	02/07/2006	Takashisa Hikida	0033-1062PUS1	9864

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
HUG, ERIC J	

ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
12/11/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/567,366	HIKIDA, TAKAHISA	
	Examiner	Art Unit	
	Eric Hug	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3,4,12 and 13* is/are allowed.

6)☒ Claim(s) *1,2,5-11 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The following is in response to the amendment filed October 16, 2008.

Response to Arguments

Applicant's arguments filed October 16, 2008 have been fully considered and are persuasive in part.

The rejection over Watanabe set forth previously is maintained, although it has been substantially modified as presented below. In view of Applicant's arguments, the examiner recognizes certain errors in the analysis of the data presented by Watanabe. In response to the arguments, the rejection has been rewritten to correct the errors, and to emphasize particular passages of the document relied upon to determine the H/NCO ratios. The rejection below contains analysis and calculations not presented previously, therefore it constitutes a new ground of rejection. Applicant is respectfully requested to reconsider the arguments in view of the modified rejection.

Regarding the rejection presented previously, upon reconsideration, it was determined that the polyurethane making up Samples 1-3, 5, 6, 8, 9, and 11-14 in Table 1 and the polyurethane making up Samples 4, 7, and 10 of Table 1, although different in composition, have the same H/NCO ratio, not different ratios as indicated previously. This is consistent with the equivalent hardnesses obtained therefrom. These numbers are no longer relied upon.

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1, 2, 6-11, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al (WO 02/48456), or in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Watanabe.

US 6,921,461 is being relied upon as an English language translation of WO 02/48456. All references below to column and line numbers correspond to US 6,921,461.

Watanabe discloses a papermaking press belt for a shoe press which includes a reinforcing substrate embedded in an elastic material. The elastic material contains a surface layer, a back layer, and an intermediate layer located between the surface layer and the back layer. The intermediate layer has a thick part which can be exposed on the belt surface through the surface layer as shown in Figure 3. The thick part is made of a low-hardness elastic material and the surface layer is made of a high-hardness elastic material. Such a belt provides improved durability in the regions of the belt susceptible to cracks corresponding to the axial ends of the pressure shoe. See column 5, lines 4-21. See also column 7, lines 18-32 regarding the embodiment of Figure 3. Each layer of the belt is composed of a polyurethane made from a urethane prepolymer having isocyanate groups, NCO, on ends and a hardener having active hydrogen groups, H, on ends. The urethane prepolymer is derived from a polyol and a phenylene isocyanate derivative. See column 5, line 32 to column 6, line 40. Thus, regarding the press belt of claim 1 and the method of manufacturing a press belt of claim 9, Watanabe discloses a press belt (corresponding to Figure 3) including terminal areas corresponding to both

ends of the pressing means in the cross direction and including a central area located between the terminal corresponding areas, wherein the terminal areas and the central area are composed of different thermosetting polyurethane materials made from a phenylene isocyanate derivative having an isocyanate group (NCO) on an end and a hardener having an active hydrogen group (H) on an end.

Watanabe does not disclose that the equivalent ratio of H/NCO is set relatively high on the terminal corresponding areas and relatively low on the central area. However, it is deemed inherent to the belt that the end regions of the belt, the regions having the lower hardness, are composed of a polyurethane having a higher H/NCO ratio than that of the polyurethane of central region of the belt, or conversely, that the central region of the belt, the region having the higher hardness, is composed of a polyurethane having a lower H/NCO ratio than that of the polyurethane of the end regions of the belt. Alternatively, it would have been obvious to one skilled in the art to increase the H/NCO ratio of the polyurethane in the end regions where a lower hardness is desired and/or decrease the H/NCO ratio of the polyurethane in the central region where a higher hardness is desired. Evidence and suggestions for this are provided in Watanabe as follows:

Applicant is directed to the disclosure beginning with the EXAMPLE, column 10, line 18, up to column 10, line 61. In the EXAMPLE, column 10, lines 31-44 defines the polyurethane of the back layer, and column 10, lines 45-56 defines the polyurethane of the intermediate layer (which makes up the end portions) as being the same as that of the back layer. This polyurethane contains 100 parts urethane prepolymer having NCO=5% and 25.3 parts hardener having a hydrogen equivalent of 219. Column 10, lines 57-61 defines the polyurethane

of the surface layer (which makes up the central portion). This polyurethane contains 100 parts urethane prepolymer having NCO=6.6% and 18.2 parts hardener having a hydrogen equivalent of 107. Clearly, the intermediate layer polyurethane has a higher H/NCO ratio, or conversely, the surface layer polyurethane has a lower H/NCO ratio. Therefore, the end portions of the belt, have the higher H/NCO ratio and the central portion has the lower H/NCO ratio.

Therefore, the belt of Watanabe meets the features of claims 1 and 9.

Regarding claim 2, a polyurethane obtained by reacting a urethane prepolymer having an isocyanate group (NCO) on an end and a hardener having an active hydrogen group (H) on an end is disclosed in column 5, lines 32-39.

Regarding claims 6 and 7, cavities (grooves) may be formed in the terminal areas as shown in Figure 4 and disclosed in column 7, lines 33-67. Wherein grooves may also be formed in the central area, the depth of the grooves in the terminal areas may be greater. See column 7, lines 60-64.

Regarding claims 8, 11, 15, and 16, which are dependent on claims 1, 2, 6, and 7, respectively, a shoe press roll comprising the belt of Watanabe is disclosed in Figure 1.

Regarding claim 10, at least the outer peripheral surfaces of the belt, corresponding to the surface layer and the exposed portions of the intermediate layer are formed in this manner.

2. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (WO 02/48456) in view of Watanabe (US 6,736,939).

The belt of Watanabe, WO 02/48456, is described above regarding claim 1. In this Watanabe reference, the thickness on the terminal corresponding areas is not disclosed as being smaller than the thickness of the central area.

Watanabe, US 6,736,939, discloses a press belt having end regions corresponding to the edges of the pressing zone and having a central region in between the end regions. The belt is constructed to have a relatively lower hardness polyurethane in the end regions as compared to the polyurethane used in the central region. Because of this, the end regions can be made thinner than the central portion of the belt, thereby further reducing potential cracking in the end regions. For the same reasons, it would have been obvious to one skilled in the art to construct the belt of Watanabe, WO 02/48456, to have thinner end regions, further providing resistance to cracking.

Allowable Subject Matter

Claims 3, 4, 12, and 13 are allowed for reasons given previously.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571) 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/
Primary Examiner, Art Unit 1791